Volunteer Firemen

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A fire such as this Atlantic City, N. J. gasoline tank explosion, in which 200 persons including 60 firemen were injured, would be unlikely in any city which properly regulates the storage and handling of flammable liquids as suggested by N.F.P.A. regulations.

The Price of Neglect!

Two Hundred Firemen and Spectators Burned by Gasoline Tank Explosion Resulting From Disregard of Commonly Accepted Fire Safety Precautions

THE danger to both life and property that may result from a disregard of fire protection safeguards was strikingly demonstrated by this spectacular gasolene tank explosion at Atlantic City, N. J. The great cloud of flame shown in the picture caused injuries which sent 60 firemen and 140 spectators to hospitals.

The explosion occurred during a fire at a gasoline and oil storage plant consisting largely of obsolete equipment. The tank which exploded was without emergency vents as required by the N.F.P.A. Model Ordinance for the Storage and Handling of Flammable Liquids. The Atlantic City fire department had no foam generator and there was no built in foam protection for the tanks. A sheet metal fence was an inadequate substitute for a standard concrete or earthen dike around the tanks.

The experience of many cities and the major part of the oil industry has proved that gasoline and oil storage tanks constructed and safeguarded in accordance with N.F.P.A. regulations are not a serious hazard to fire fighters. Atlantic City, however, had no ordinance regulating the storage and handling of flammable liquids and no fire prevention bureau or other agency to make inspections for fire hazards.

Fighting Factory Fires

Plan of Attack May Be Worked Out in Advance But Layout of Private Water Mains, Hydrants, Pumps, Tanks and Sprinklers Must Be Known

By Harold S. Walker
(Member, N.F.P.A.)

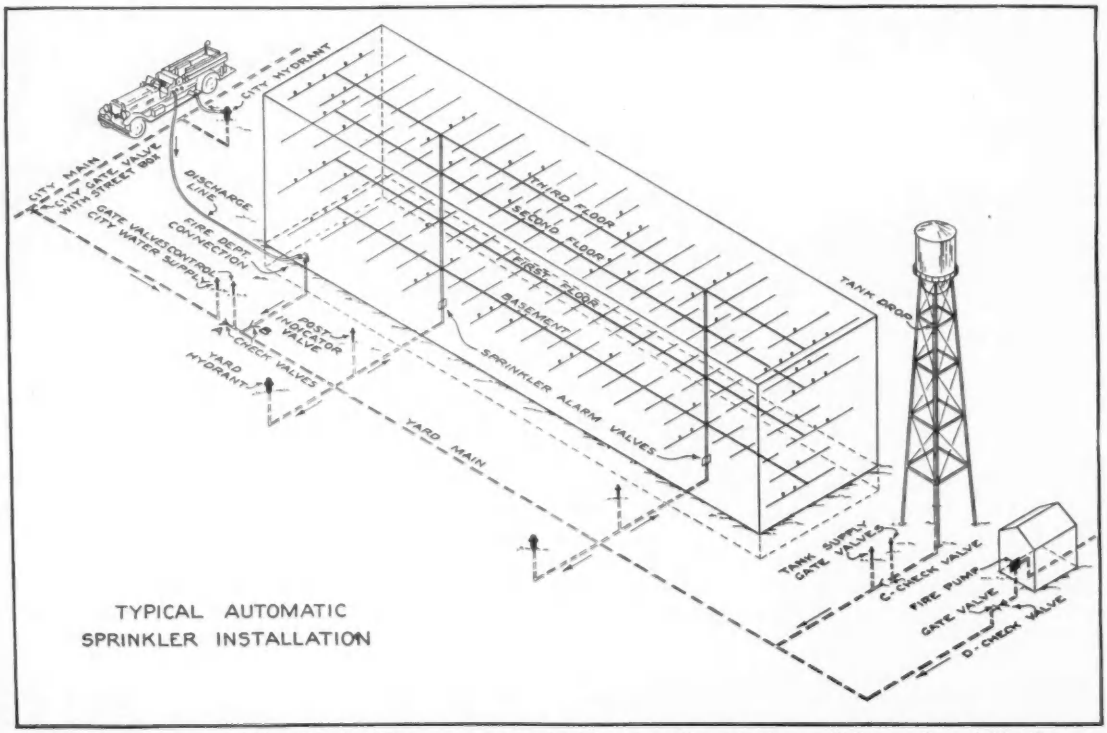
This is the first of a series of articles on Fighting Factory Fires by Mr. Walker. Mr. Walker is an engineer of the Associated Factory Mutual Fire Insurance Companies and has had over twenty years' experience as a volunteer fireman.

THE job of any fire fighting organization is to bring the fire under control with as little damage by fire and water as possible. In industrial plants this is especially important because interruption to production schedules is much more serious than the actual loss by fire. A very small fire in a certain machine or room of a factory can tie up the plant, putting men out of work and preventing the concern from meeting its contracts. The service which a fire department can give to the factories in its town may be of much greater practical importance than in the case of many other occupancies.

So much can be accomplished in the way of effective fire fighting by looking over conditions on the ground before a fire that inspection work is a regular procedure in the majority of fire departments today. When the fire comes there isn't time to do much pondering about what action is to be taken. While making inspections, however, there is plenty of time to work out a complete plan for attacking fire in any factory or other building.

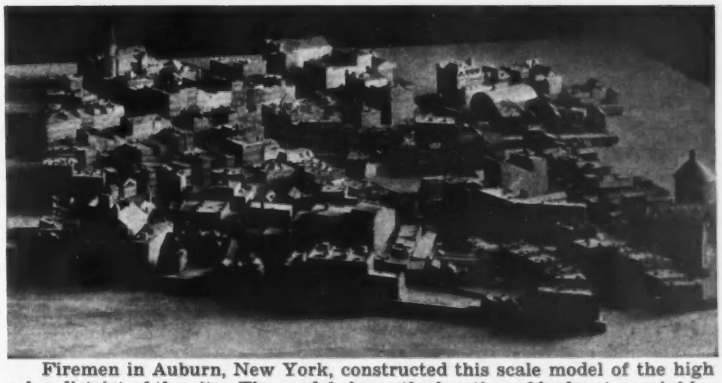
A fire department inspection of a factory includes not only a study of processes involving flammable or explosive materials, but the best means for fighting fires. In properties which have their own private fire protection such as automatic sprinklers, the inspection must cover the entire layout of the private protection. The way in which gravity tanks, fire pumps and city water connections and hydrants are hooked up is of considerable practical importance. It is very important to know how much water is going to be available at the plant at pressures suitable for fire fighting.

There are many problems for the fire department officers and the plant manager to discuss beforehand. There is, for example, the important question as to the best locations from which fire department pumpers may take suction. In a plant arranged like the one in the accompanying diagram it would not be feasible, for example, for the fire department pumper to hook up to one of the hydrants on the private yard system. This would result only in taking



Most factories, especially if the buildings are protected with automatic sprinklers, will have a layout like the one illustrated. This shows how sprinklers and yard hydrants are supplied with water from a city connection, gravity tank and private fire pump, and the correct hook-up for a fire department pumper to make the most effective use of the private equipment.

water out of the gravity tank which is provided to supply the automatic sprinkler system. By pumping from a street hydrant into the yard system as shown in the illustration a fire department pumper can augment the private water supply from the gravity tank and private fire pump. In some cases the nearest hydrant on the public water system may not be the best hydrant from which to take suction because it is located on a small-sized main. A few hundred feet farther away there may be a hydrant on a larger main which would offer a better source of supply, or there may be a pond, lake, or stream nearby where an adequate water supply is available.



Firemen in Auburn, New York, constructed this scale model of the high value district of the city. The model shows the location of hydrants, sprinkler connections and details of construction and enables a plan of attack on a fire in any of the buildings to be completely worked out in advance.

THIS problem is typical of numerous others which may be settled in advance of a fire. Many factories have buildings the occupancy of which is such as to call for special planning, either due to the construction of the building or because of the material which it contains. In general, the broad plan of action to be followed when a fire comes is something that must be worked out to the mutual satisfaction of the fire department officers and the plant managers.

Practical results of such an inspection and conference were shown by a recent fire in a cottonseed oil mill. On arrival the fire department found one section of the mill in which there was considerable fire which was threatening to spread. The mill was equipped with automatic sprinklers, but the system was not standard in all respects. Because the contents of the building were highly combustible and the construction of a quick-burning type, the sprinklers couldn't wholly put the fire out although they were retarding its spread. The officer in charge of the fire company knew about the property and knew that the sub-standard sprinkler system might not hold the fire. He promptly directed his first efforts toward keeping the fire from spreading through openings in the fire walls through which a wooden conveyor passed. These openings were not protected with fire doors. Some hose streams were used from the outside and others were taken into sections adjoining the fire area. Any fire which came through the conveyor openings was immediately knocked down. This prompt and effective work prevented the spread of the fire and confined the damage to the building where it started.

BY CONTRAST, lack of knowledge of conditions and failure of the management of another plant to mark the valves on its sprinkler system caused unnecessary damage. After a fire in a large storage warehouse in a midwestern city, firemen attempted to shut off the sprinklers. These men had not made a sufficiently detailed inspection of the building and they were not familiar with the sprinkler valves. They experimented with a number of the valves which controlled the several sprinkler systems in the building hoping that they would eventually shut the right valve and stop the flow of water. In doing this, they opened a dry pipe valve which allowed water to be turned into sprinkler systems in a cold storage section. Of course, this water froze solid in the pipes in this section and made it necessary for the sprinklers in the entire building to be shut off and a sprinkler contractor to be called to thaw out the frozen pipes and restore the system to normal again. Lack of proper inspection and proper co-operation from the management, therefore, left one important plant in this city without automatic protection.

Another example of much the same sort of thing occurred when firemen were called to the fourth story of a large manufacturing building occupied by numerous small manufacturers. A fire was found in some rolls of cloth. The building was sprinklered and one sprinkler was operating when the firemen arrived and had practically extinguished the fire. A few extinguishers were used to put out the smouldering cloth which water from the sprinklers could not reach. Had this building been one properly inspected by the fire department, the officers and men would have known that there was only one valve necessary to be closed in order to stop the flow of water once the fire was out. Because the men did not know this, they did a job for which no fire department would want to take credit. They closed every valve in sight, including the main city connections, several steam valves, and the controls for the domestic water service. In this case the management had properly tagged the valves and full instructions were posted in the main hallway of the plant. Before finding, by this hit or miss method, the proper valve to shut off, water ran for ten or fifteen minutes, spreading over a considerable area on the fourth floor of the building, leaking into the floor below and causing unnecessary damage.

WHEN inspections have been made and the officers and men know their business there is no waste motion in getting the fire promptly under control. A good example is the case of a fire which occurred in a five-story tannery, also a sprinklered building. A fire in the third story was discovered while still small by an employee of the night shift. He shouted an alarm to the watchman who telephoned the fire department and then in his excitement shut the sprinkler valve. When the firemen arrived they found the third and fourth stories of the building in flames and immediately attacked the fire with hose streams. Meanwhile an assistant chief noticed that the sprinklers were not operating. He knew where the valves were, investigated, and found the controlling valve as the watchman had closed it. He opened it promptly and from then on the sprinklers effectively aided in the extinguishment of the fire.

How Are You Called to Fires?

Do You Rely on Telephone Calls With Their Chances of Error and Delay, Or Is There a Modern System of Street Fire Alarm Boxes?

HOW is a fire alarm sounded in your town? When the well known Mr. John Q. Citizen, driving home at an early morning hour, finds smoke rolling from a store in the business district, how does he let you in on the secret? Does he have to hunt around for a telephone; attempt to arouse neighbors; drive to the police or fire station to sound a siren; or can he step to the corner and simply pull down the hook of the faithful old fire alarm box knowing that the exact location of the fire will be automatically transmitted to the fire department without error and without the loss of time which so frequently results from telephoned alarms?

The use of fire alarm boxes is not restricted to large cities. As a matter of fact fire alarm box systems are in service in many communities of less than 1,000 population and the cost of a modern fire alarm box system for the average small community is often less than that of a piece of fire apparatus.

In the belief that firemen would be interested in knowing how many cities and towns in the United States are protected by fire alarm box systems the N.F.P.A. made a survey of fire alarm systems this summer. This survey showed that three out of every five communities in the United States having more than 5,000 population had alarm box systems. Obviously the relative number of communities having box systems varies somewhat in various parts of the country. For example in New England more than 9 out of 10 communities of over 5000 population have alarm box systems whereas in parts of the West a number of rapidly growing communities have not as yet installed modern fire alarm systems.

AS WOULD be expected almost all of the cities of more than 25,000 population in the United States have fire alarm boxes and most large fire departments take great pride in having their alarm equipment at top-notch efficiency. Interest in fire alarm box equipment is, however, also growing in the smaller communities. According to the N.F.P.A. survey there are at present 315 communities of less than 2500 population in the United States having fire alarm box systems. The total number of fire alarm box systems in service in the United States is 1361. Of these 343 are in cities of more than 25,000 population, 703 are in cities having populations between 5000 and 25,000 and the remainder are in smaller communities.

The watchman who discovered this fire last winter failed to give complete information when he telephoned the alarm. The delay thus caused contributed to the spread of this fire to adjoining property and resulted in $375,000 loss.

Briefly a modern fire alarm box system for a small community consists of a single closed circuit serving 20 to 30 street boxes distributed about the community. The circuit is connected to a register in the fire station which records the number of any box operated. The system also operates a coded siren or whistle which sounds the box number giving volunteer firemen the exact location of the fire. It also can be made to sound bells in the firemen's homes. In addition where desirable, private alarm boxes and automatic fire alarm and sprinkler systems can be connected to the public alarm system.

It is true that the telephone is a useful ally of the fire department but it was not designed to be a fire alarm system. Telephone company officials cooperate as far as possible to assist in the transmission of fire alarms and other emergency signals but they do not wish to take the responsibility for the 100 per cent accuracy which is necessary in giving alarms of fire. Uninformed persons sometimes argue that the telephone is the only fire alarm necessary. The N.F.P.A. Fire Record Department files, however, show many instances of serious fires which resulted from errors caused by attempting to give an alarm by telephone. For example it often happens that one telephone exchange serves several communities having separate fire departments. It is a difficult job for the telephone operator to send the correct fire company to the right address, especially where there is a duplication of street names. Unfortunately there have been lives lost because the telephone operator did not know from which community the call originated and notified the wrong fire department. Other reasons for the failure of telephone alarms often reported are the following:

1. Occupants of the building did not know that the telephone wires had burned and wasted valuable time attempting to get the operator.
2. Time was lost in getting the operator at night in rural sections.
3. Excited persons frequently failed to give complete information or gave misleading information causing the fire department to respond to the wrong location.

4. Similarity of street names in different sections of community caused misunderstanding.
5. Telephone exchange was located in adjoining community and wrong fire department called.
6. Telephone system was out of order due to storms, lightning, or service was suspended.

It is not only the possible chance of error in telephone alarms which causes communities to install fire alarm boxes. A modern fire alarm box system installed in accordance with the N.F.P.A. regulations offers many advantages not found in other means of giving fire alarms. Outstanding among the advantages are the following:

1. The box system gives the exact location of the call automatically without error. There is no chance for human misunderstanding to garble the call.
2. There is no delay. The alarm is sounded the moment the hook on a box is pulled.
3. The box number is at once transmitted to the entire department by means of a coded whistle or siren. The number is also recorded on a register at the fire station. Bells may also be installed in the firemen's houses.
4. A modern box alarm system is electrically and mechanically reliable and cannot quit without giving a warning. As fire alarm systems are closed circuit systems, any break in the circuit is immediately detected.
5. Fire companies may be assigned to respond to boxes in accordance with the hazards of the area served by each box.
6. The fire department has its own independent signaling system, so essential in times of emergency when it is often impossible to make telephone connections.
7. Fire alarms may be transmitted directly to the fire department from manual and automatic systems in schools, factories and institutions.
8. A fire alarm box system is always available day or night.

As firemen inform the public of the superiority of fire alarm box equipment over other means of giving fire alarms, no community will consider its fire defences complete until it is protected by a modern fire alarm box system. One fire which gets beyond control due to a delayed alarm can cause a loss far greater than the cost of such equipment.

A Few Wooden Shingles Remained

In accordance with a city ordinance prohibiting the fire spreading wooden shingle, this Newton, Mass., apartment building had been gradually reroofed with fire retardant roofing until only the small wing shown in the picture remained covered with wooden roofing. However, a chimney spark found this small wooden section and although the fire department was almost immediately on the scene the fire had already swept to the peak of the roof and destroyed a dormer window. The picture shows the burned portion protected by fire department covers.

Locomotives As Fire Engines

The Illinois Central Railroad System maintains a fleet of fire engines greater than that of most of the largest cities. These pumpers do not have gasoline motors, neither are they painted red, but nevertheless they are very effective fire fighters. Each carries a water supply of 8,000 to 10,000 gallons and can maintain a 100 gallon per minute stream for over an hour. This remarkable fire engine fleet consists of 350 locomotives in service at terminals and other congested areas on the railroad which are difficult of access to regular fire trucks. Each locomotive carries a reel box containing fifty feet of specially treated cotton, rubber-lined hose, with a nozzle and necessary connection, all of which can be quickly attached. Water is normally pumped from the tender to the boiler by an injector, but when water is wanted for fire purposes, it can be diverted into the fire hose. Engine and train crews have been trained to handle this fire fighting equipment. Fire hose and nozzle are kept in good condition and there is a regular inspection each month to make sure that the equipment will be ready to serve when needed.

FIRE DEPARTMENT HYDRANT RECORD

Location .....

Inspection district of ..... Co. No. .....

Date installed .....

Make ..... Size .....

Hose connections: 2½ in. .....

Pumper connection (Size) .....

Size of main ..... Shutoff valve? .....

Turns to open ..... Direction .....

Flow capacity ..... g.p.m. Class .....

Remarks .....

Sketch may be made above to show location of hydrant in relation to streets, etc.

REPAIRS MADE

Date	Kind

(BACK SIDE)

Record of Hydrant Inspections

The inspection should especially cover the following:

1. Is hydrant accessible and unobstructed?
2. Leak in main valve when hydrant is closed?
3. Leak in drip valve when main valve is open, but outlets capped?
4. Threads of butts and caps clean?
5. Does hydrant open and close easily?
6. Does it need painting?
7. Report damages to hydrant.

Date	Condition or What Was Done	Inspector	Date	Condition or What Was Done	Inspector

Checking Hydrant Supplies

THERE is probably nothing more important for a fire department to know than the strength of its water supplies. In actual fire fighting practice the connecting link between the fire department pumpers and the public water system is the fire hydrant. A Hydrant Record Card similar to that shown on page six helps fire departments know the condition and relative capacity of each hydrant.

Because the proper condition of fire hydrants is so essential to good fire fighting, progressive fire departments generally make an inspection of all hydrants in their territory each Spring and Fall. Items which should be covered by such an inspection are listed on the Hydrant Record Card.

In addition to routine inspections, flow tests should also be made of each hydrant and the amount of water which it can normally supply without letting the pressure drop below 20 pounds should be indicated on the record card for each hydrant. Hydrants should be tested individually at a time when the waterworks pumps are supplying the greatest domestic demand.

Where the fire department knows the relative capacity and pressure available at each hydrant they will be able to make efficient use of the water system. Poor fire streams often result from attempting to place more streams in operation than the water mains can supply. Similarly it is frequently reported that a fire department placed too many pumpers on a small dead end main which could not possibly supply them and failed to use a larger main a short distance away. It is recommended that hydrant tops be painted different colors to indicate the relative capacity of the hydrant. Hydrants delivering over 1000 g.p.m. should have green caps; those delivering 500 to 1000 g.p.m. should have orange caps; hydrants delivering under 500 g.p.m. should have red caps.

A knowledge of hydrant capacities and locations also helps firemen determine the type of hook-up which should be used in fighting a fire. Where a hydrant is close to the fire and good pressures are available, it may not be necessary to use a pumper and direct hydrant lines can be laid. On the other hand, where water pressure is low or long lines are necessary the pumper must be used and hose lines may be laid from the fire to the hydrant.

International

This scene at a middle west hotel fire is typical of the hardships and difficulties which will be faced by fire fighters at hundreds of places this winter. Only those who have fought fires at zero temperatures can appreciate the handicaps of frozen and immovable equipment not to mention the personal suffering caused by exposure to icy water and biting winds.

When Winter Comes

THE busy season for fire fighters is approaching. Many volunteer departments will soon be doing heavy duty and will be putting into practice the lessons learned at the summer firemen's training schools. Cold weather always brings a large increase in fire losses. During the past five years winter losses have exceeded the total losses of summer months by $123,000,000 or 36 per cent.

Usually the first warning of the winter fire season that fire fighters in the northern United States and in Canada, receive is an epidemic of chimney fires. Careful inspection should always be made to insure that no defect in the chimney has allowed fire to extend into the building. As cold weather closes in, there are frequent fires due to overheated and defective heating equipment. During the severely cold weather many fires are caused by attempts to thaw frozen piping with open flames. Fire departments should make every effort to discourage this dangerous practice.

As the busy season begins the fire station must be warm enough to enable the apparatus to start promptly and also keep extinguishers and booster tanks from freezing. Non-freezing solutions should not be used in foam or soda-acid extinguishers because they will prevent the chemicals in the extinguisher from properly operating.

Solutions of 75 per cent calcium chloride should, however, be used in water pails or barrels and pump tank extinguishers in all unheated buildings. A mixture of 10 pounds calcium chloride with two gallons of water will prevent freezing down to 40 degrees below zero. Half that amount of calcium chloride will give protection down to 10 degrees above zero.

Hydrants, sprinkler equipments, standpipes, fire pumps and other forms of fire protection equipment must be protected against freezing weather. Readers desiring more complete information should write for copies of N.F.P.A. bulletins entitled "Precautions Against Freezing of Fire Extinguishing Appliances" and "Frozen Water Pipes."

The protection of booster equipment is a problem in some departments. Where the apparatus is kept in a warm station there is little likelihood that freezing can occur before the apparatus arrives at a fire, providing that the line is not charged before it is needed. After being used, however, booster equipment may become frozen before the apparatus returns to quarters with the possibility that it will not be available for another fire. Even the big line will freeze if shut down in severely cold weather. It is sometimes necessary to keep the nozzle partly open in order to keep the water moving and prevent freezing after the line is once charged.

Rural Schools Often Firetraps

Famous Athlete Carries Scars Obtained in Rural School Blaze—Many Youngsters Have Lost Their Lives While Attending Fire Trap Schools

By Francis R. Scherer, *Chairman*
National Fire Protection Association Committee on "Safety to Life"

GLENN
CUNNINGHAM
-HOLDER OF THE WORLD'S RECORD FOR THE MILE, CARRIES THE SCARS OF A RURAL SCHOOL FIRE WHEN A BOY—
5 SCHOOL BUILDINGS BURN IN THE UNITED STATES EVERY DAY OF THE YEAR
AT ANNUAL LOSS OF $3,000,000
-FAULTY CHIMNEY CONSTRUCTION AND SPARKS ON WOOD ROOFING CAUSE MORE THAN ONE-HALF OF THE FIRES IN FARM SCHOOLS-
-THE NEW LONDON, TEXAS EXPLOSION WAS ONE OF HISTORY'S MOST DISASTROUS — BUT SCHOOLS OF QUICK BURNING CONSTRUCTION HAVE TAKEN A GREATER TOLL OF LIVES-

GLENN CUNNINGHAM, the world's greatest one-mile runner, is a Kansas farm boy. On June 16, 1934, at Princeton, N. J., he astounded the athletic experts of the nations by running a mile in the phenomenal time of 4 minutes 6 7/10 seconds, a new world's record.

But Glenn Cunningham came close to never reaching the sports pages as an athletic hero for young America.

The rural school which he attended as a boy in Kansas was the scene of a terrifying fire when he was yet a little youngster in the early grades. Several children were burned to death. Cunningham was severely burned. One of the powerful legs which has carried him to world's records still bears the scars.

But Cunningham was lucky. Thousands of other school children, in school buildings poorly designed and unsafely constructed to combat the hazards of fire, have been less fortunate. Five school buildings burn in the United States somewhere every day of the year. No one knows how many boys and girls whose lives were ended by fires in schools that were veritable tinder boxes might have grown into citizens of national prominence for the advance of humanity.

Especially is this true in these days of the rural school where too often funds which should have been devoted to the protection of these future citizens have gone into other projects. The nation was shocked only a few months ago when some 300 children lost their lives in the New London, Texas, gas explosion. Thus it was proved that not always even in a modern fire-resistive school building is life completely safe from other unguarded hazards. But there is no excuse whatever for the flimsy, fire-inviting structures with inadequate exits in which so many children spend their days.

This is especially true because the rural school in most cases is comparatively isolated, without means of fire protection save that provided by the teachers, the janitors and students.

In the small one-, two- and three-room school of the country district—the familiar "little red schoolhouse" in which so many of our public men learned their first lessons—the need for improved safety to life is especially imperative. The buildings often have been allowed to fall into a state of disrepair. There are no safe emergency exits; if there is a fire escape, it is of the flimsy ladder type, worse than useless. Too little attention is paid to fire drills. Fire extinguishers are notable by their absence. Heating facilities are too often archaic. The stoves or furnaces must be pushed on cold winter mornings in order to make the school comfortable by nine o'clock.

Then it is that old and faulty chimney construction becomes a positive menace. Then it is that sparks from such a chimney, nestling among the dried-out wooden shingles still too often used in the construction of school roofs can start a fire which, unseen by anyone as it smolders on the roof, is the germ of a real disaster.

For the failure to provide fire-safe construction and heating apparatus and fire-resistant roofing such as asphalt shingles, asbestos, metal, slate or tile, along with proper fire-prevention facilities with which the children and teachers should be fully familiar, there can be no excuse in any school today save that of false economy. It has been authoritatively stated that faulty chimney construction and sparks on roofs cause more than one-half of the fires in farm dwellings and that this is true no less of farm schools than of farm dwellings.

Ask the editor of your newspaper if he would like to publish this page. We will furnish a mat of the cartoon upon request.

DULUTH, Minn.

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1—PIRSCH— 750 GAL. SERIES PARALLEL PUMPING ENGINE
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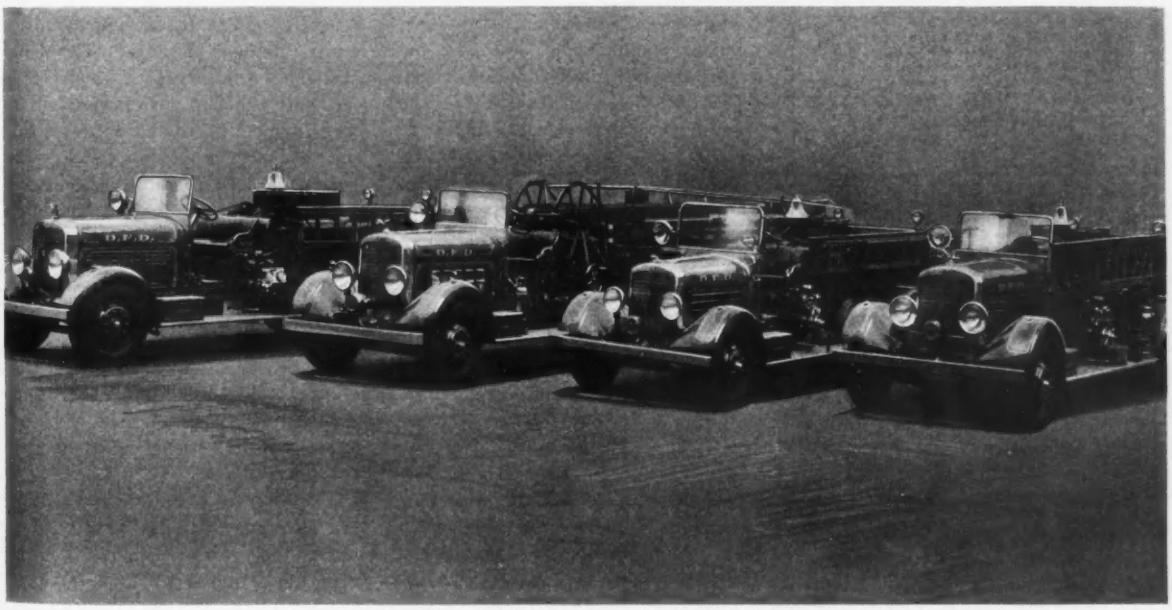

PIRSCH APPARATUS LEADS

WRITE

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Volunteer Firemen

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Half Baked Criticism Criticism of fire departments is an old sport of our most accomplished "sidewalk engineers". Usually, however, firemen's shoulders are sufficiently broad to let such talk drop off like water from their firecoats. There are times, however, when the sport is carried too far and calls for a statement of the facts involved. Such a case of unjust criticism followed a fire which destroyed the stables of a riding academy just outside the city of Boise, Idaho, early on the morning of September 4, 1937. A national news magazine accused the Boise fire department of standing by while seven valuable horses were burned to death because the fire was 25 feet beyond the city limits.

Such are not the facts of the case. The Boise fire department was not called until the riding academy buildings were practically destroyed. Persons on the scene before the firemen arrived had been unable to save the horses. There was no hydrant available and a strong wind was carrying embers into the city where grass fires were endangering other property. Under these conditions the fire department could not spare a pumper to wet down the ruins, especially as the only water supply was a drainage ditch 550 feet away.

The problem brought up by this incident has been very troublesome to city officials. Persons put up structures outside the city limits which do not have to comply with city building laws. They then "chisel" on the city taxpayers for protection for these fire traps. Few cities can afford to maintain a fire department large enough to protect these outside areas. Furthermore, the terms of many city charters do not allow the city to indemnify firemen who may be injured at fires outside of the city.

The Boise Fire Department had for many years attempted to make some arrangement to extend protection to the property owners outside its corporate limits. It had even extended its fire prevention activities to these outlying areas. The suburban residents were too indifferent, however, to protect themselves either by organizing a fire district to purchase protection from the city or by forming a volunteer fire department. It is the hope of Chief W. A. Foster of the Boise Fire Department that this fire will provide sufficient impetus to action to bring about the organization of fire protection districts in his own and other rural areas.

Many Departments Renew Membership Rapid growth is not the only criterion by which the success of an organization must be judged. The ability to hold the loyalty of its members is also essential. For this reason the large number of volunteer fire departments renewing their N.F.P.A. membership each month is of special interest. Last month 41 fire departments with 939 men renewed their membership in the Volunteer Firemen's Section. In addition 10 new companies with a total of 195 men were enrolled. The total membership in the section is now 560 fire departments with 12,415 member firemen. The following departments are newly enrolled:

Chesterton Fire Department, Chesterton, Indiana.

Oak Park Fire Department, Ferndale, Michigan.

Moose Lake Fire Department, Moose Lake, Minnesota.

Clatonia Volunteer Fire Department, Clatonia, Nebraska.

Wolfeboro Fire Department, Wolfeboro, New Hampshire.

Oradell Volunteer Fire Department, Oradell, New Jersey.

Roseburg Fire Department, Roseburg, Oregon.

East Lansdowne Fire Company No. 1, East Lansdowne, Pennsylvania.

Newtown Square Fire Company No. 1, Newtown Square, Pennsylvania.

Waterloo Volunteer Fire Department, Waterloo, Ontario.

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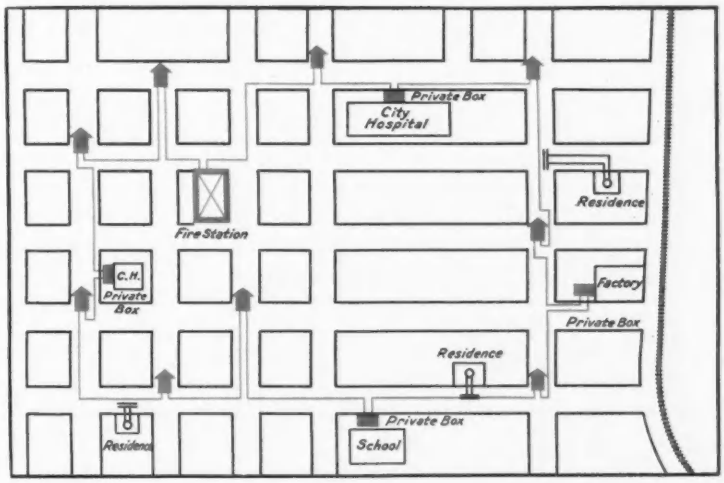
Schematic Diagram
VITAGUARD FIRE ALARM SYSTEM



The diagram shows a typical Vitaguard System. The Red line indicates the path of the simple wire circuit connecting all elements of the system with the fire station including the necessary essentials of a Fire Alarm System for a volunteer fire department, namely:

1. **Fire Alarm Boxes so located as to be readily accessible from all points of fire hazard.**
2. **Public Alarm Equipment of great sound penetration, speed, and reliability—automatically controlled by the fire alarm boxes for directing the firemen to the scene of fire.**
3. **Control equipment—simple yet entirely automatic in operation.**

We invite correspondence and will freely co-operate in planning adequate fire alarm protection at a minimum cost.

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NEWTON UPPER FALLS MASSACHUSETTS

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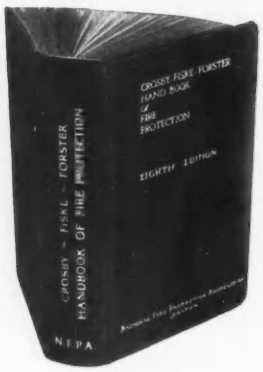

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60 Batterymarch Street, Boston

Membership Plan

Volunteer Firemen's Section, National Fire Protection Association

INDIVIDUAL membership in the National Fire Protection Association costs $10 per year. The membership plan for the Volunteer Firemen's Section is designed to give each fire company the advantages of N.F.P.A. membership. The fire company, as a member, receives at its headquarters a complete set of all regular N.F.P.A. literature, including the *Quarterly* magazine, as issued. In addition, as a special service to the Volunteer Firemen's Section, each fire company holding N.F.P.A. membership is entitled to have copies of the magazine VOLUNTEER FIREMEN sent to the home addresses of 20 firemen each month. If more than 20 firemen want to receive the magazine, an additional 50 cents should be sent in with the membership fee for each fireman in excess of 20 listed on the application blank.

Perhaps the simplest way to finance membership is to vote the annual dues from the company treasury. Other departments not wishing to take the money out of their treasury collect 50 cents from each man who is to receive VOLUNTEER FIREMEN until at least the minimum company membership fee of $10 is reached.

COMPANIES having less than 20 members frequently find outsiders who are interested and will pay 50 cents, or each fireman may put in a little more to make up the $10 for the company. In some cases a civic organization interested in the fire department may be willing to contribute all or a part of the dues so that the department may receive the advantages of belonging to the N.F.P.A. The N.F.P.A. does not specify which of the above methods may be used in financing membership. Just send in the annual dues with the names and addresses of the firemen who are to receive VOLUNTEER FIREMEN.

A Village Fire Department

FIRE CHIEF RAYMOND COOK of Hadar, Nebraska, reports that the trailer fire truck described in a recent issue of VOLUNTEER FIREMEN was of much interest because he has been fighting fires with a trailer equipment for four years. Hadar is the smallest village belonging to the Nebraska State Volunteer Firemen's Association. They have no water supply but have two 40-gallon chemical tanks on a trailer. The apparatus also carries the following assortment of appliances which make possible the use of modern fire fighting methods: 74 feet of ladders, 2 gas masks, first aid kit, pike pole, axe, spade, crowbar, 4 electric hand lights, wire cutters, 18 buckets, 2 1½-quart carbon tetrachloride extinguishers and 50 feet of rope. The entire apparatus cost only $400.

Chief Cook reports that their experience shows that no village is too small to have some fire protection. He states, however, that the most important thing in a small fire department is to get a group of men trained so that they know what to do when the alarm comes in. Since the Hadar department was organized four years ago, they have not had a single fire get out of control. The largest fire occurred at 1:15 a.m. on January 23, 1936, when the temperature was 16 degrees below zero. It was a serious roof fire which required the use of 160 gallons of chemicals.

△ △ △ △ △

Discussion Subjects

71

Q. Why should firemen know about the private fire protection systems of local industrial plants?

A. There is no time to study private protection when a fire occurs. One small fire may stop factory production. See page 2 for full discussion.

A Problem Question
FOR NOVEMBER
Suggested for discussion at company and department meetings this month

72

What precautions are generally observed in connecting a hydrant line?

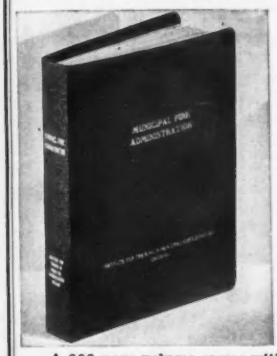
Watch for the answer in the next issue of VOLUNTEER FIREMEN

If you are a fire commissioner, city manager, fire chief or fire department officer, or if you hold any other administrative position in your local government, or aspire to such position—

KEEP AHEAD OF YOUR JOB

by enrolling in a Practical Correspondence Course in

FIRE ADMINISTRATION



A 600-page volume comes with the course and contains material never before found in print.

WHILE sponsored by city managers as a part of the in-service training program of their profession, here is a course which has a value to everyone who has anything to do with the direction or operation of a fire department. The problems of volunteer and part-paid fire departments, including such typical ones as those of equipment, rural water supplies, mutual aid and county organization are given equal attention with problems of the larger city fire department. Available nowhere else is the data included from more than 200 cities covering fire department personnel, stations, insurance costs and fire losses. The nominal fee of $25 for the course covers the above text (which the student may keep), the course of lessons, and personal review and correction of lesson papers.

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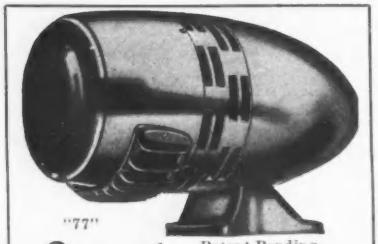

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Here is a siren with two distinct tones—a high, piercing tone to penetrate closed cars with a shriek for instant action—and a low, carrying tone that clears traffic for blocks ahead. To add to the carrying power, the frequencies of the two tones cross at regular intervals to produce an extra weighted beat that rolls ahead like the third wave at the seashore. You get two tones and triple power! And combined with this are the features of our famous C-5 Coaster Siren—the brilliant red or green flashing light beam, enabling traffic to both SEE and HEAR your warning—long roll of more than TWO MINUTES after current is shut off—grease sealed ball bearing motor—all-chrome finish. Write for New Bulletin No. 56 for complete details.

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Federal VERTICAL Sirens are most practical because

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(3) Entirely weatherproof housing finished in Red Duco withstands sleet, rain, hail and dust storms.
(4) They are equipped with special high speed, ball bearing Federal Siren motors. Built for many uses.

Write for Bulletin No. 55 for complete details.

FEDERAL ELECTRIC CO.
8717 So. State St. Chicago, Ill.

Bring Home $10.00 Easy Money

Pyrene Prize Letter Contest Pays for Stories of Good Work Done by Firemen With Extinguishers

YOU may win extra cash for Christmas by entering the Pyrene contest this month. Letters by firemen describing their experiences with fire extinguishers bring cash prizes in the contest conducted jointly by the Pyrene Manufacturing Company of Newark, N. J., and VOLUNTEER FIREMEN.

FIRST PRIZE — $10.00

LUTHER M. MONTGOMERY, *Chief*
Volunteer Fire Dept., De Queen, Ark.

Proper Use of Two Extinguishers

I recently received a call for help from a construction camp 12 miles from here. When told that it was a gasoline fire my first thought was the possible loss of life and property. Although not permitted to take the fire truck outside of the city limits, we responded with two 2½-gallon extinguishers in the car of one of our members. On arrival we found five 55-gallon barrels of gasoline burning. We whipped the fire on the wooden framework with a soda-acid extinguisher and then sealed the burning barrels with a foam extinguisher. This saved a truck grease rack, office building and the greater part of the gasoline.

SECOND PRIZE — $3.00

C. A. JOHNSON, *Assistant Chief*
Fire Department, North Sacramento, Calif.

Extinguisher Refills Drown Blaze

Here is an experience which occurred a few years ago in an automobile agency in which I was employed. Several motors had been washed with gasoline at the wash rack and considerable gasoline had collected in the sump. Someone pulled a boner by failing to disconnect a battery and when the metal tip of the cleaning gun came in contact with a live connection on the motor the gasoline in the pit caught fire. We were able to pull the car off the rack and with a 1-quart carbon tetrachloride extinguisher put out the fire in the car. The sump however was a greater problem. I happened to think of a dozen carbon tetrachloride extinguisher refills in the stock room. Grabbing an armful of them and a hammer I ran to the rack, broke in the top of a can and hurled it on the fire. This made quite an impression so I tossed in a couple more and by the time half a dozen had been used the fire was under control.

THIRD PRIZE — $2.00

C. G. ANDERSON, *Chief*
Fire Department, Brooks, Alberta

Chief Checks Dwelling Blaze

Our department responded to an alarm on September 3, 1937, for a fire in an old one story frame shack of light construction having a wooden shingle roof and badly weathered exterior. Arriving ahead of the apparatus I was somewhat doubtful of our ability to save the structure. The north end of the building including the shingle roof was well ablaze and heavy smoke was pouring out along the entire length of the roof gable. I took the 1½-quart continuous stream carbon tetrachloride extinguisher from my car and gave the "hot spots" on the outside a couple of shots. The flames appeared to be in the interior wall and running up the studding. Ordering neighbors to throw open the windows I went to work on the interior walls and checked the fire at its source. By this time the truck had arrived and completed the job using one chemical tank on the wooden shingle roof and in the attic. The loss of this dwelling would have been serious to the occupants, as dwellings are at a premium in this rapidly growing town.

CONTEST RULES

1. Contestants in the Pyrene Prize Letter Contest must be members of their local fire department.
2. Letters are to describe actual experiences where any approved fire extinguisher of any make has saved lives or property.
3. Trade names may be used but will be deleted in publication. Publishers reserve the right to edit winning letters to permit publication.
4. Each contestant automatically vouches for the truth of the facts presented from his own or others' experience.
5. Only one letter may be submitted each month.
6. Letters must be legibly written in ink or typewritten on white paper, one side only. Preference will be given to letters not over 250 words in length.
7. Letters received after the 8th of the month will be judged in following month's competition.
8. Monthly prizes in cash will be: 1st, $10.00; 2nd, $3.00; and 3rd, $2.00.
9. Address contest letters to Pyrene Prize Letter Contest, National Fire Protection Association, 60 Batterymarch St., Boston, Mass.

New Champion Trailer Fire Engines!

Capacity 100 Gallons per Minute

Towns, Villages and Rural Districts may well consider Trailer Apparatus has many advantages

$545 Complete With Basic Equipment

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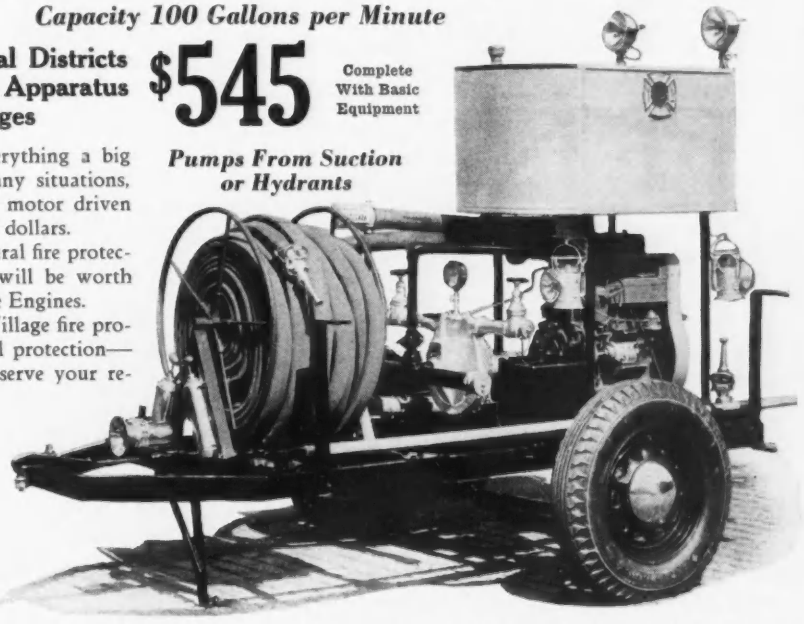

Equipped with practically everything a big city truck carries, it will, in many situations, prove more practical than heavy motor driven fire trucks that cost thousands of dollars.

☛ If you are interested in rural fire protection or forest fire protection it will be worth your while to consider trailer Fire Engines.

☛ If you are interested in Village fire protection, Community or Industrial protection—perhaps Trailer Apparatus may serve your requirements better than any other type of equipment, regardless of price.

When all is said and done, so to speak, the actual efficiency of fire apparatus depends upon the available water supply. In larger towns and cities the water main hydrants supply fire apparatus with a flow of 500 gallons per minute—practically unlimited. But in some small communities the water supply is so limited that the cost of big city apparatus may not be justified.

Champion Trailer Apparatus just fits in where some real adequate fire protection is needed. It's a new development by the Fire Engineers of W. S. Darley & Co.

Simple, very praiseworthy, we believe. In fact, a very capable fire apparatus. Fully equipped with pumping Engine, a special Fire Pump, Hose on Hose Reel, Water Tank, Hand Extinguishers, Fire Axe, Pike Pole, Flood Searchlights, Electric Fire Lanterns, Nozzles, Valves, etc. . . . just about everything a fire truck carries.

While terrifically powerful in action—unbelievably so until you see it—yet it's so exceptionally light in weight most any automobile can trail it at speeds of 50 to 60 miles per hour.

Members of Volunteer Fire Departments have cars. So any member can in a jiffy hitch the Trailer to his rear bumper. Often the start is only a matter of seconds because his car motor is warmed up and running when making the Trailer pick-up. No delay trying to start a cold, long-standing truck motor, warming it up, etc. A Trailer is always ready to go; to make a flying start when the call comes.

The car making the hitch can take five men or perhaps more. Volunteers, when the alarm is sounded, usually follow apparatus in their own cars; decidedly the best practice.

Champion Front Mounted Fire Pumps $290 to $425

More and more Fire Chiefs are realizing that when it comes to performance, dependability and value it's impossible to outclass the Champion—the Pioneer of Underwriter Approved Direct Drive Fire Pumps.

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You don't have to buy a Champion on anyone else's say so. We have so much confidence in the ability of our Pump to sell itself by test that we'll ship you any Pump, Front or Midship Mounted, for 30 Days Free Trial. If the Pump fails to satisfy you, return it, all transportation charges paid by us. You can install any Champion Pump without mutilating the chassis, and we'll reimburse you for any expense of mounting and dismounting the Pump.

You can sell yourself and convince the most skeptical city officials that Champion is the best buy in Fire Pumps by your own easy Free Trial Test.

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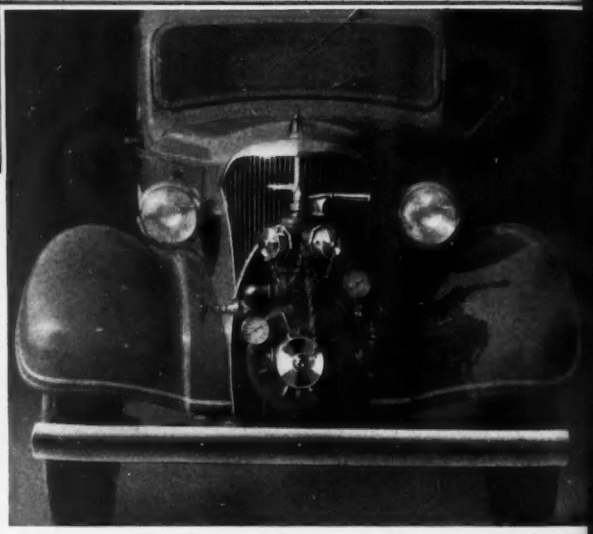

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